ACC.13
62nd Annual Scientific Session & Expo
TCT@ACC-i2

E1400
JACC March 12, 2013
Volume 61, Issue 10

Prevention

VISIT-TO-VISIT VARIABILITY OF SYSTOLIC BLOOD PRESSURE PREDICTS OUTCOMES MAINLY IN THE ACTIVE TREATMENT GROUP RATHER THAN THE PLACEBO GROUP IN THE SYSTOLIC HYPERTENSION IN THE ELDERLY PROGRAM: PATHOPHYSIOLOGIC IMPLICATIONS

Moderated Poster Contributions
Poster Sessions, Expo North
Sunday, March 10, 2013, 9:45 a.m.-10:30 a.m.

Session Title: Hypertension: Patterns, Profiles and Pills
Abstract Category: 25. Prevention: Hypertension
Presentation Number: 1186M-11

Authors: *John B. Kostis, Jeanine E. Sedjro, Javier Cabrera, Nora M. Cosgrove, Sara Pressel, Barry R. Davis, UMDNJ-Robert Wood Johnson Medical School, New Brunswick, NJ, USA, Rutgers University, Piscataway, NJ, USA*

Background: Previous studies of blood pressure visit-to-visit variability (VVV) were of rather short duration and rarely included placebo. We investigated VVV of systolic blood pressure (SBP) in the active and placebo groups of Systolic Hypertension in the Elderly Program (SHEP).

Methods: SHEP was a placebo-controlled trial with a randomized phase up to 6 years in older patients with isolated systolic hypertension. We ascertained death from the National Death Index. Variability of intraday mean to SBP trend (rSSR), variance of absolute values of second differences of successive daily SBP (VABS2) and Variance Independent of Mean (VIM) obtained from the first 2 years (randomization to the end of 24 months) were used to predict outcomes. Outcomes were: the first occurrence of stroke, myocardial infarction or heart failure after the first 2 years (4 years follow up) and cardiovascular death after 2 years up to 17 years (15 years follow up). Cox proportional hazards models adjusting for gender, age, serum creatinine, diabetes, body mass index, smoking, left ventricular failure and high-density lipoprotein cholesterol were used.

Results: The relationship of SBP VVV to outcomes was stronger in the active treatment group than in the placebo group. VIM was a weaker predictor of outcomes.

Conclusion: SBP VVV predicted morbid and fatal outcomes. This was observed primarily in the active treatment group implying that missing doses of medications may be an additional explanation for the relationship of VVV with outcomes.

Treatment groups	Outcome	Type of analysis	rSSR HR (95% CI)	VABS2 HR (95% CI)	VIM HR (95% CI)
Active treatment	Combined Event	Unadjusted	1.0090* (1.0020, 1.0160)	1.0000 (0.9998, 1.0010)	1.0760 (0.8874, 1.3050)
		Adjusted	1.0070 (0.9994, 1.0153)	1.0001 (0.9995, 1.0007)	1.0769 (0.8764, 1.3230)
	17-Year CV death	Unadjusted	1.0130*** (1.0080, 1.0170)	1.0010*** (1.0010, 1.0010)	1.2830 *** (1.1360, 1.4480)
		Adjusted	1.0049* (1.0001, 1.0100)	1.0005** (1.0002, 1.0010)	1.0779 (0.9450, 1.2290)
Placebo	Combined Event	Unadjusted	1.0070* (1.0010, 1.0130)	1.0000 (1.0000, 1.0010)	1.1110 (0.9402, 1.3130)
		Adjusted	1.0057 (0.9993, 1.0122)	1.0002 (0.9997, 1.0007)	1.1083 (0.9299, 1.3090)
	17-Year CV death	Unadjusted	1.0040* (1.0000, 1.0080)	1.0000 (0.9998, 1.0010)	1.1240* (1.0120, 1.2480)
		Adjusted	1.0001 (0.9957, 1.0046)	1.0000 (0.9996, 1.0000)	1.0080 (0.8982, 1.1310)

*p-value < 0.05, **p-value < 0.001 , ***p-value < 0.0001